REMARKS

Claims 1-12 and 15-18 are currently pending in the present application.

Applicants wish to extend their appreciation to Primary Examiner Doerrler for the indication on page 4 of the Official Action that claims 4, 7-9, 16 and 18 contain allowable subject matter.

Applicants also wish to extend their appreciation to Primary Examiner Doerrler for withdrawing the rejection under 35 U.S.C. § 103(a) of claims 1-3, 5, 6, 10-12, 15 and 17 as being obvious over Hieserman (U.S. Patent 2,764,607) in view of Michelet (U.S. Patent 3,544,611).

The rejection under 35 U.S.C. § 103(a) of claims 1-3, 5, 6, 10-12, 15 and 17 as being obvious over Hieserman (U.S. Patent 2,764,607) in view of Hatfield (U.S. Patent 4,278,788) is respectfully traversed.

Claim 1 is directed to a process for the partial or complete separation of a mixture comprising hydrogen chloride and phosgene, wherein the process comprises: partially or completely condensing phosgene; then distilling or stripping away the hydrogen chloride from the phosgene in a column; and subsequently scrubbing the hydrogen chloride obtained from the top of the column with a process solvent to absorb the phosgene.

As discussed in the present specification, an exemplary aspect of the present invention involves separating a mixture comprising phosgene and hydrogen chloride in order to obtain both a phosgene product stream and a hydrogen chloride product stream of high purity (See e.g., page 10, lines 14-18 and 37-39, page 11, lines 17-27 and 42-44, page 13, lines 10-13 and 32-39, page 14, lines 13-14 and 34-37, page 15, lines 27-28 and 37-38).

The process of the present invention involves distilling or stripping in a column a partially or completely condensed mixture of phosgene and hydrogen chloride to obtain from the bottom of the column a phosgene product stream that is highly pure with respect to hydrogen chloride content. The highly pure phosgene product stream obtained from the bottom of the column may

then be recycled in the isocyanate synthesis while avoiding the formation of undesirable amine hydrochloride and urea byproducts, thereby advantageously reducing phosgene holdup, reducing energy consumption and improving yields (See e.g., page 2, lines 2-7, page 3, lines 1-7, page 8, lines 21-27, page 10, lines 20-23 and 27-33, page 11, lines 43-45, page 13, lines 10-13 and 35-39).

The process of the present invention also involves scrubbing hydrogen chloride obtained from the top of the column with a process solvent to obtain a hydrogen chloride product stream that is highly pure with respect to phosgene content. The highly pure hydrogen chloride product stream thus obtained may then be economically used in other processes (e.g., an oxychlorination process for preparing vinyl chloride or a Deacon process for producing chlorine) (See e.g., page 2, lines 2-24, page 11, lines 42-43, page 13, lines 15-26 and 35-39, page 15, lines 27-28 and 37-38).

Accordingly, the process of the present invention provides two separate and distinct product streams of high purity, namely a highly pure phosgene product stream and a highly pure hydrogen chloride product stream.

In contrast, the object of Hieserman is directed to a process for recovering phosgene only, as the hydrogen chloride of Hieserman is eliminated via neutralization in a caustic scrubber (See e.g., column 1, lines 15-18, 36-37, 40-42 and 71, column 2, lines 1 and 33-37). Unlike the claimed invention, the process of Hieserman involves: passing a mixture of hydrogen chloride and phosgene through a condenser to recover partially condensed phosgene and obtain a remaining mixture comprising gaseous hydrogen chloride and uncondensed phosgene; extracting the uncondensed phosgene from the remaining mixture with an absorption solvent in an absorption column to recover solvent laden phosgene; and eliminating the gaseous hydrogen chloride obtained from the top of the absorption column via neutralization in a caustic scrubber (See e.g., column 1, lines 15-18, 36-42 and 49-70, Examples 1 and 2, and claims 1-3). Accordingly, Hieserman necessarily fails to disclose or suggest obtaining a hydrogen chloride product stream of high purity.

Another fundamental distinction is that a much smaller amount of phosgene absorption solvent is required in the process of the present invention since only a minimal amount of phosgene needs to be removed from the hydrogen chloride obtained from the top of the column, as compared to the copious amounts of phosgene absorption solvent required for the absorption column in the process of Hieserman (See e.g., column 2, lines 29-33 and 61-63).

Unlike the claimed invention, Hatfield describes a method for reducing the halogen content in a polyolefin formed by catalytic polymerization of an olefin in the presence of a Ziegler-Natta catalyst comprising: contacting the polyolefin with alkylene oxide, which reacts with halogens present in the polyolefin to form alkylene halohydrin; removing the alkylene halohydrin thereby reducing the halogen content of the polyolefin; and reacting the alkylene halohydrin with a caustic solution in a caustic scrubber to recover alkylene oxide thus formed (See e.g., abstract, column 1, lines 6-10, column 2, lines 53-68, column 3, lines 1-14).

Applicants respectfully submit that contrary to page 4, lines 8-13 of the Official Action, a skilled artisan would not have been motivated to combine Hieserman with the clearly unrelated reference of Hatfield, since Hieserman is directed to a process for recovering phosgene only, whereas Hatfield is directed to a method for reducing the halogen content in a polyolefin formed by catalytic polymerization of an olefin in the presence of a Ziegler-Natta catalyst.

Applicants further submit that even if sufficient motivation and guidance is considered to exist for a skilled artisan to combine Hieserman with the clearly unrelated reference of Hatfield, a skilled artisan would not have arrived at the process of the present invention which provides two separate and distinct product streams of highly pure phosgene and highly pure hydrogen chloride, since the caustic scrubbers of Hieserman and/or Hatfield eliminate gaseous hydrogen chloride via neutralization.

Withdrawal of this ground of rejection is respectfully requested.

In conclusion, Applicants submit that the present application is now in condition for allowance and notification to this effect is earnestly solicited.

Respectfully submitted,

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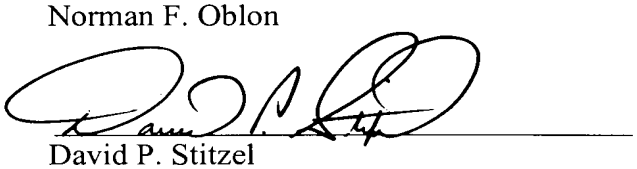

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